

REMARKS

The Office Action mailed October 4, 2005, has been received and reviewed. Claims 1-31 and 51-66 are currently pending in the application. Claims 1-16 stand rejected. Claims 17-31 and 51-66 have been allowed. Applicant respectfully requests reconsideration of the application in light of the remarks presented herein.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent No. 5,609,889 to Weber in view of U.S. Patent No. 5,286,426 to Rano, Jr. et al.

Claims 1, 2, 4 and 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Weber (U.S. Patent No. 5,609,889) in view of Rano, Jr. et al. (U.S. Patent No. 5,286,426). Applicant respectfully traverses this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The 35 U.S.C. § 103(a) obviousness rejections of claims 1, 2, 4 and 5 are improper because the cited references fail to teach each and every element of the claims.

Weber teaches a printed wiring board prepared with a heat sink attached. A mold for a transfer molding process is provided with a biased plug that exerts extra pressure on the heat sink or printed wiring board to prevent molding compound from covering the heat sink. The finished transfer molded pin grid array is shown in FIG. 3. Electrical contacts (i.e. pins) 12 are secured in vias 11 of the molded pin grid array. (Col. 7, lines 53-60)

Rano teaches a method for assembling a lead frame between two plate-mold cavity plates.

An encapsulating plastic body is formed about each chip 12. This is accomplished by sandwiching the lead frame strip between two cavity plates 20 and 22 as shown in FIG. 2, having cavities that surround each integrated circuit chip 12 including portions of the lead frame fingers 16. Lead frame strip regions lying outside the perimeter of the mold cavities 24 will, in the completed mold assembly, be contacted by the flat mating portions of the bottom and top cavity plates 20 and 22. Col. 2, lines 37-52. A pair of short guide pins 50 extends upwardly from the bottom cavity plate 20 for registration with two pilot holes 18 of the lead frame strip 10. Col. 3 lines 9-12. Cavities, 24, are spaced at intervals in a row in the bottom cavity plate 20. Col. 2 lines 63-64. The assembly fixture also has a base plate 36 with two upwardly extending guide posts 38 and 40. The guide posts 38 and 40 extend through two holes 42 and 44 in the bottom cavity plate 20. Col 3 lines 1-6. The top cavity plate also has guide holes 66 that will be penetrated by guide posts 38 and 40. Col 3 lines 67-68.

Claim 1 recites an “apparatus for facilitating processing of a plurality electronic component assemblies, comprising: a first platen including a plurality of sets of *alignment elements projecting from a like plurality of shallow recesses in a surface of the first platen*, the like plurality of shallow recesses configured to receive a like plurality of electronic component assemblies, and the plurality of sets of alignment elements configured and positioned for cooperatively engaging sets of alignment features of the like plurality of electronic component assemblies arranged in a plurality of mutually laterally spaced locations over the first platen.” (emphasis added)

Weber fails to teach or suggest a first platen including a plurality of sets of alignment elements projecting from a like plurality of shallow recesses in a surface of the first platen, nor is there any suggestion or motivation in Weber or in the knowledge generally available to one of ordinary skill in the art to modify the mold plates of Weber. Additionally, there can be no reasonable expectation of success for any such modification thereof. Weber teaches a lower platen 23' having a plurality of recess or cavities 51, 51A for receiving electrical contacts 12. The electrical contacts 12 do not project from a surface of the upper platen 22, and are not included therewith. Rather, the electrical contacts 12 are a part of the pin grid array, as clearly depicted in FIG. 3.

Rano fails to cure the deficiencies of Weber. Specifically, Rano fails to teach or suggest a first platen including a plurality of sets of alignment elements projecting from a like plurality of shallow recesses in a surface of the first platen. Rano teaches a base plate 36 with two upwardly extending guide posts 38 and 40 which extend through two holes 42 and 44 in the bottom cavity plate 20. The top cavity plate also has guide holes 66 that will be penetrated by guide posts 38 and 40. Spaced apart from lead frame strip regions, guide posts 38 and 40 are not configured to engage lead frame strip 10, and do not project from shallow recesses for receiving lead frame strips. (See FIG. 2) The lead frame strips of Rano are contacted by the flat mating portions of the bottom and top cavity plates 20 and 22, not received by shallow recesses in the bottom cavity plate.

Accordingly, Weber and Rano fail to teach or suggest each and every element of claim 1. Therefore, it is respectfully submitted that the rejection to claim 1 should be withdrawn.

The nonobviousness of independent claim 1 precludes a rejection of claims 2, 4, and 5 which depend therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03. Therefore, the Applicant requests that the Examiner withdraw the 35 U.S.C. § 103(a) obviousness rejection to independent claim 1 and claims 2, 4, and 5 which depend therefrom.

Claims 4 and 5 are additionally allowable because Rano fails to teach or suggest component cavities divided into a plurality of subcavities separated by strut members. The cavities of Rano surround *each integrated circuit chip 12 including portions of the lead frame fingers 16*. The perimeter of the cavities about each lead frame strip is indicated in FIG. 1 as a dashed line 24. FIG. 1 does not show an inherent teaching by Rano of subcavities, rather FIG. 1 shows that a non-divided cavity surrounds each integrated circuit chip to form an encapsulating plastic body about each chip 12.

Obviousness Rejection Based on U.S. Patent No. 5,286,426 to Rano, Jr. et al. as applied to claim 1, and further in view of U.S. Patent No. 5,985,185 to Steijer et al.

Claims 3 and 6-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over

Rano, Jr. et al. (U.S. Patent No. 5,286,426) as applied to claim 1, and further in view of Steijer et al. (U.S. Patent No. 5,985,185). Applicant respectfully traverses this rejection, as hereinafter set forth.

The teachings of Rano have been summarized above.

Steijer et al. is directed to encapsulating optocomponents with a capsule of plastic or resin material using a mould assembly. As described, the mould assembly comprises a lower mould half 1 having a mould cavity 3 and an upper mould half 17 having a mould cavity 19 (Figs. 1 and 2). The mould assembly is configured to receive a lead frame 51, which rests on shoulders 71 of mould cavity 3 (col. 6, lines 3-16). Lower mould half 1 further includes fixed guide pins 73 that are placed in holes 75 of lead frame 51 in order to keep lead frame 51 in its correct position in mould cavity 3. Both lower mould half 1 and upper mould half 17 include positioning pins 85 and corresponding holes 87 for receiving positioning pins 85, the function of which is to place the two mould halves 1 and 17 in mutually correct positions during the moulding process (Figs. 1 and 2 and col. 7, lines 57-61).

It is respectfully submitted that Weber, Rano and Steijer, taken either alone or in combination, do not teach or suggest each and every element, of independent claim 1, from which claims 3 and 6 through 16 depend, nor is there any suggestion or motivation for modification thereof, and there can be no reasonable expectation of success for any modification thereof. Claims 3 and 6 through 16 are each therefore allowable, among other reasons, as depending from claim 1 which should be allowed.

As set forth above, Applicants submit that Weber and Rano fail to teach or suggest all the limitations as set forth in independent claim 1. Steijer fails to cure the deficiencies of Rano and Weber. Steijer fails to teach or suggest a first platen including a plurality of sets of alignment elements projecting from a like plurality of shallow recesses in a surface of the first platen, the like plurality of shallow recesses configured to receive a like plurality of electronic component assemblies, the plurality of sets of alignment elements configured and positioned for cooperatively engaging sets of alignment features of the like plurality of electronic component assemblies, and a second platen including a plurality of component cavities extending therethrough, the second platen further including a plurality of sets of alignment element

receptacles configured and positioned to respectively receive therein the plurality of sets of alignment elements as set forth in claim 1 of the present invention. Rather, Steijer teaches a lower mould half 1 including fixed guide pins 73 that are placed in holes 75 of lead frame 51. Fixed guide pins 73 are not received by the upper mould half 17. Lower mould half 1 and upper mould half 17 include positioning pins 85 and corresponding holes 87 for receiving positioning pins 85, however, positioning pins 85 and corresponding holes 87 are not configured for engaging alignment features of lead frame 51. Positioning pins 85 do not project from a shallow recess, rather are located outside the lead frame region of mould cavity 3. (See FIG.1) Accordingly, Steijer fails to cure the deficiencies in Weber and Rano. Therefore, it is respectfully submitted that claim 1 is allowable over the combination of Weber, Rano and Steijer because the cited prior art fails to establish a *prima facie* case of obviousness because the cited prior art does not teach or suggest the claim limitations of the claimed invention of claim 1.

Claims 3 and 6 through 16 are each allowable, among other reasons, as depending from claim 1 which should be allowed.

Claims 6, 8, 10-12, and 14 are each further allowable because neither Weber, Rano nor Steijer teach or suggest a component cavity divided into a plurality of subcavities separated by strut members. It is respectfully submitted that there is no suggestion or motivation either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify either reference. Weber teaches molding Rano teaches forming an encapsulating plastic body about each chip, a cavity surrounding each chip. There is no motivation to subdivide a cavity because a single chip is surrounded by the cavity. Steijer teaches encapsulating an optocomponent. Again, there is no motivation to subdivide the mold cavity of Steijer because there is only one optocomponent to be encapsulated in the mold cavity. While a mere duplication of parts has no patentable significance unless a new and unexpected result is produced, *In re Harza*, 124 USPQ 378 (CCPA 1960), a component cavity divided into a plurality of subcavities separated by strut members is not a duplication of parts. Strut members are not taught or suggested in Weber, Rano or Steijer, therefore it is not a duplication of parts to divide a component cavity using strut members.

CONCLUSION

Claims 1-31 and 51-66 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicant's undersigned attorney.

Respectfully submitted,



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